vs. 4.6 ± 8.9; $P = 0.0029$) and interventions (5.8 ± 11.1 vs. 0.7 ± 1.1; $P = 0.0042$). Only 11.6% of PD patients used an ambulance or transport organized by the dialysis center/sickness fund, compared with 67.8% for HD. The estimated annual cost for the public payer (PP) was €72,350 per HD and €55,343 per PD patient (i.e., 31% more). As in 2006 there were approximately 6400 patients on dialysis (90% on HD, 10% on PD), the PP total cost is estimated to be around €452 million (2.45% of 2006 health care budget). The dialysis procedure was the main cost driver (66% of costs) being 27% more expensive for HD. Hospital and ambulatory services were respectively 28% and 45% more expensive for HD. **CONCLUSIONS:** The economic burden of dialysis is important in Belgium. Considering that survival of PD patients is at least as good as that of HD patients and that home-treatment reduces exposure to hospital pathogens, PD represents good value for money and should be considered in more patients.

PUK16

COST OF ILLNESS ASSOCIATED WITH RENAL TRANSPLANTATION AND DIALYSIS IN END STAGE RENAL DISEASE IN THE UNITED STATES

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OBJECTIVES: A patient suffering from end stage renal disease (ESRD) has two treatment options, lifelong dialysis or renal transplantation. The aim of this review is to determine economic cost of illness associated with renal transplantation and dialysis in ESRD in the United States (US). **METHODS:** The information was retrieved from databases including Medline, EMBASE, United States Renal Data System (USRDS), WHO and relevant grey literature. Studies reporting data for cost associated with transplantation and dialysis in ESRD in the US were included. **RESULTS:** In 2007, hemodialysis (HD) was initiated in 99,886 patients, peritoneal dialysis (PD) in 6376 patients and transplantation in 2500 patients in the US. Total Medicare costs associated with these were $17.6 billion for HD, $949 million for PD and $1.9 billion for transplantation (USRDS 2009). Unadjusted average annual Medicare expenditure (2004 US$) for PD and HD as first modalities was $53,277 and $72,189 respectively (Shih 2005). Patients with HD were twice as likely to be hospitalised over a 12-month period compared to matched PD patients. The median health care costs associated with hospitalization were $173,507 for HD patients vs. $129,997 for PD patients (Berger 2009). The mean length of stay was significantly less for PD with 6.57 days ($P < 0.0001$) vs. 7.25 days for HD (Walker 2009). The mean cost of treating S. aureus bacteraemia in HD patients, including readmissions and outpatient costs, was $24,034 per episode (Engemann 2005). Over a 25 year time horizon, renal transplantation resulted in significant cost savings with a cost of $376,577/patient and life expectancy of 7.4 years compared to $568,670/patient and life expectancy of 6.7 years with long term dialysis (Quinn 2007). **CONCLUSIONS:** Renal transplantation results in significant cost savings compared to long term dialysis. The total health care costs associated with hemodialysis are higher compared to peritoneal dialysis.

PUK17

PATIENT CO-MORBIDITIES AFFECT THE COST OF DIALYSIS PATIENTS IN BELGIUM

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OBJECTIVES: This analysis was done to assess if co-morbidities influence the public payer (PP) cost of dialysis patients in Belgium. **METHODS:** The data from a cost study (retrospective chart review of 130 Belgian patients undergoing dialysis in 2006) was analyzed *a posteriori*. Baseline medical characteristics were used to compute the Charlson co-morbidity score (CCMS). Costs included: dialysis procedure and medical management (i.e., hospitalizations, outpatient visits and procedures, laboratory and imaging tests, and transport). Multivariate analyses were performed with the logarithmic transformation of costs as the dependent variable and CCMS, dialysis modality (hemodialysis: HD or peritoneal dialysis: PD) and gender as the independent variables. The regression model was weighted by number of patient months in the study. CCMS was categorized as low (<4), moderate (4–5), high (6–7) and very high (> = 8). **RESULTS:** All 3 variables had a significant impact on costs. Total costs to the PP were 16% higher for HD than for PD patients (p = 0.0039) and were 13% higher in women than in men (p = 0.0207). The costs in patients with a very high CCMS were 21% higher than those with a low or moderate score (p = 0.0072 and p = 0.0094 respectively) and 10.7% higher than those with a high score, but this latter difference did not reach statistical significance (p = 0.1160). The differences were larger when excluding the cost of dialysis procedure and considering medical management only, but only reached statistical significance or patients having a very high CCMS score vs. low or moderate CCMS (p = 0.0036 and 0.0056 respectively). **CONCLUSIONS:** This analysis showed that patient co-morbidities have a significant impact on medical management and total costs of dialysis patients. It is therefore important to take this into consideration when studying the costs of dialysis patients, especially if a total cost approach (i.e., procedure plus medical management) is taken.

PUK18

COST-EFFECTIVENESS ANALYSIS OF TIMELY VERSUS LATE DIALYSIS REFERRAL AFTER RENAL TRANSPLANT FAILURE IN SPAIN

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OBJECTIVES: Complications due to late dialysis referral after graft loss involve higher medical costs, together with a worsened health status and higher mortality rates. The efficiency of timely (TDR) versus late dialysis referral (LDR) after renal transplant failure is evaluated for the Spanish case. **METHODS:** A Markov model was developed and 6 health states were defined: hemodialysis (HD), peritoneal dialysis (PD), transplant (TX), late referral hemodialysis (LRHD), late referral peritoneal dialysis (LRPD) and death (D). a hypothetical cohort of patients aged 45 was observed during 40 years, considering age-dependent mortality rates. Transition probabilities were estimated using data from the Spanish Nephrology Society registry. Costs (in 2009 EUR) were obtained from a comprehensive literature review and included both direct (DC) (medical and non-medical) and indirect costs (IC) (lost labor productivity due to mortality and morbidity). Effectiveness was measured in terms of Quality Adjusted Life-years (QALYs). Health utilities were estimated from a proprietary database. a discount rate of 3.5% was considered for both cost and effectiveness figures. All the model parameters were supported by an expert panel. Incremental Cost-Effectiveness Ratios (ICERs) and Net Health Benefits (NHBs) were computed. a willingness-to-pay threshold of €35,000/QALY was taken into account. Both univariate and Monte Carlo multivariate sensitivity analyses were performed. **RESULTS:** The ICER was €27,385/QALY (IC not included) and €34,051/QALY [IC included], providing NHBs of (0.08) [0.01]. TDR yielded 0.37 additional QALY/patient. The multivariate sensitivity analysis showed that TDR was efficient in (54%) [53%] and dominant in (28%) [27%] of the simulations. The probability of accepting TDR was (55%) [50%]. **CONCLUSIONS:** TDR is an efficient scenario when compared to LDR, providing a greater number of QALYs with yet an affordable increase in costs. Our results, however, raise the debate on the suitability of the willingness-to-pay threshold as a rigid decision tool.

PUK19

ECONOMIC EVALUATION OF ALISKIREN IN TYPE 2 DIABETES AND HYPERTENSION PATIENTS WITH NEPHROPATHY IN MEXICO

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OBJECTIVES: To determine the most cost-effective alternative between a) Losartan, and b) Losartan + Aliskiren in type 2 diabetes and hypertension patients with microalbuminuria in the Mexican Institute of Social Security. **METHODS:** A complete economic evaluation was performed from institutional perspective, using a Markov model as analytical tool with semi-annual cycles and follow up until death, with transversal analyses at 10, 15 and 20 years. Simulating a cohort with a 53 years old patient with type 2 diabetes, hypertension, and microalbuminuria and using a discounting rate of 5% in costs and effectiveness. One assumption is that all patients that require dialysis receive it. Proportion of patients who have not received dialysis, as well as survival and quality of life were considered as effectiveness end points. Transition probabilities were obtained from AVOID study and IMSS information. Resource use was obtained from IMSS data and costs are considered in 2009 USD. Probabilistic and non-probabilistic sensitivity analysis was performed. **RESULTS:** Keeping a patient in stages prior to dialysis at 20 years of follow-up requires an investment of $19,647 with Losartan and $18,774 with Losartan + Aliskiren. After 14 years of follow up, Aliskiren + Losartan is dominant versus the use of Losartan. **CONCLUSIONS:** Aliskiren + Losartan is a cost-saving alternative if administered for prolonged periods, being the most effective regardless the period of monitoring and effectiveness measurement used.

PUK20

THE COST-EFFECTIVENESS OF LANTHANUM CARBONATE VS. SEVELAMER HYDROCHLORIDE IN PATIENTS WITH END-STAGE RENAL DISEASE

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OBJECTIVES: To assess the cost-effectiveness between two non-calcium binders, lanthanum carbonate (LC) and sevelamer hydrochloride (SH), in end-stage renal disease (ESRD) patients previously treated with calcium-based binders. **METHODS:** A Markov model was developed to estimate incremental costs for three health outcomes: 1) quality-adjusted life-years (QALYs), 2) Life-years saved (LYS) and 3) percent who successfully met serum phosphorus (SP) level goals (3.5–5.5 mg/dl) between the two non-Ca binders. The model incorporated patient-level data from a randomized head-to-head crossover study which compared the reduction of SP using fixed doses of LC for 4 weeks. For this analysis the model included patients previously treated with calcium-based binders. The 'intent-to-treat' (ITT) population and the 'completer' population were assessed. Baseline risks of cardiovascular disease (CVD), overall mortality, and CVD mortality were derived from a large US epidemiological study. Utilities, costs and relative risks of CVD were derived from published sources. Patient outcomes were modeled for 10 years, and incremental cost-effective ratios (ICERs) were calculated for LC relative to SH. Clinical and economic outcomes were dis-